RECENT TRENDS IN SPATIAL DISORIENTATION RESEARCH

Introduction

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15 Nov 00

BACKGROUND TO MEETING

- AFRL “SD Business Plan” devised for new 5-year SD funding; scientific guidance needed to direct future SD research
- U.S. Army SD problem on rise; U.S. Army Medical & Materiel Command sees need for comprehensive SD knowledge bank

PURPOSE OF MEETING

- Review latest trends in SD research
- Offer guidance for future SD research
- Prepare for SD text
- Elevate status of SD research

Interest Strong!

SPECIFIC GOALS OF MEETING

- 3-day meeting (~30 researchers)
- Cover all areas of SD
- Include time for open discussion
- International presence (Canada, Germany, Netherlands, Russia, Sweden, United Kingdom, USA)
- Emphasize operational problems and experience (~1/3 of presenters are pilots)

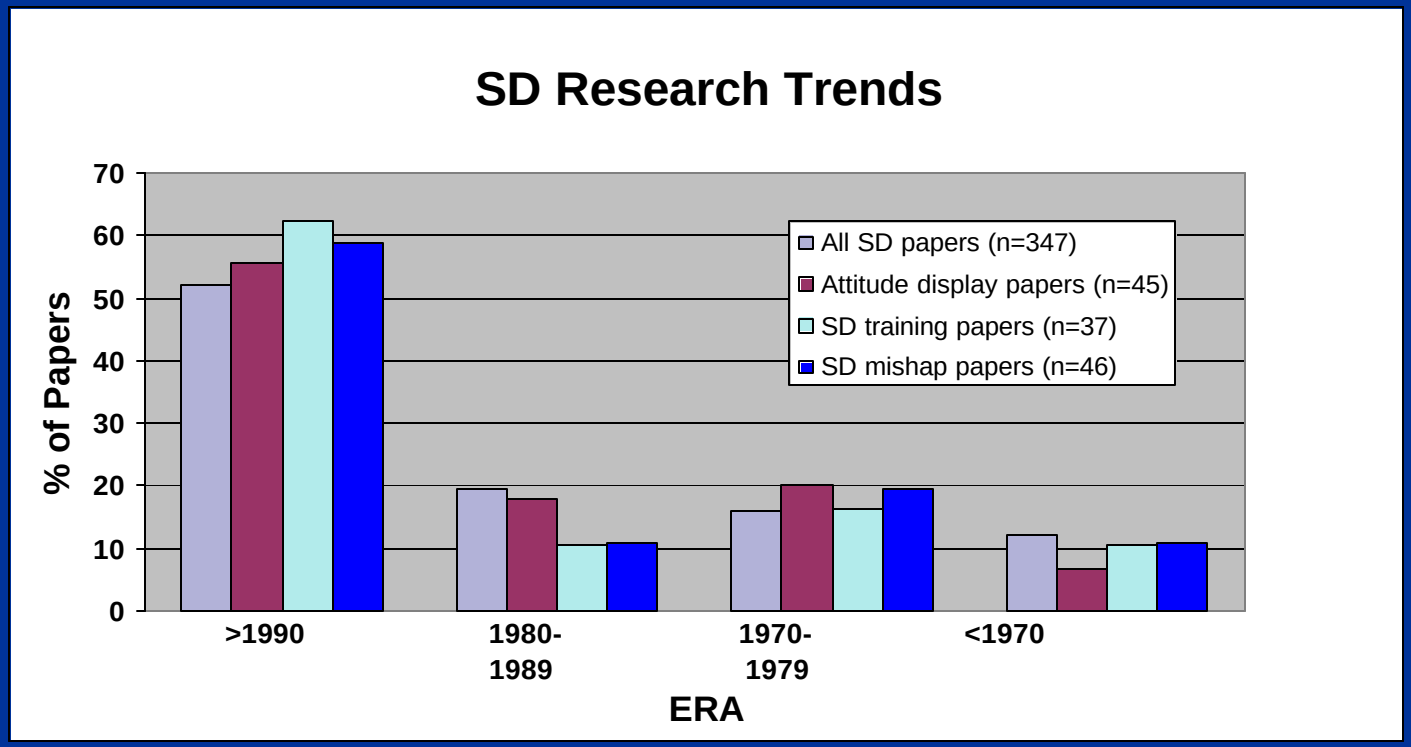
CD FROM MEETING

- All power-point presentation slides
- Question-and-answer transcripts
- Summary discussion for each section:
  - SD mishaps
  - SD mechanisms
  - SD training
  - Primary flight displays
  - SD advanced technologies

OTHER PRODUCTS OF EFFORT

- **Literature review**
  - **to appear on *www.spatiald.org***
  - **submitted to *Aviat. Space Environ. Med.***
- **“Spatial Orientation in Flight” textbook**
  - **to include 11 chapters**
  - **to be published by end of 2001**
  - **first comprehensive SD text**

RESULTS OF LITERATURE REVIEW



BASIC AGENDA

- *Wednesday (15 Nov 00)*
  - **SD Mishap papers (4) + panel**
  - **SD Mechanisms (7) papers + panel**
- *Thursday (16 Nov 00)*
  - **SD Training (5) papers + panel**
  - **Army Ops luncheon speaker**
  - **Primary flight display papers (8)**
- *Friday (17 Nov 00)*
  - **Primary flight display panel**
  - **Future SD technologies papers (3) + panel**
  - **Summary**

ISSUES FOR EACH PANEL

- What gaps do we have in our current understanding?
- What future problems/technologies will arise that will pose new challenges to our existing knowledge base?
- What specific lines of research should be given high priority in the future?

DEFINITION OF SPATIAL DISORIENTATION

“[A failure] to sense correctly the position, motion or attitude of [the] aircraft or of [the pilot] within the fixed coordinate system provided by the surface of the earth and the gravitational vertical.”

In addition, errors in perception by the aviator of his position, motion or attitude with respect to his aircraft, or of his own aircraft relative to other aircraft, may also be embraced within a broader definition of spatial disorientation in flight. ***-- Alan Benson (1988)***

KENT GILLINGHAM (1937-1993)